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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,667	07/28/2004	Wen-Chi Chang	ACMP0146USA	4666

27765 7590 02/27/2007  
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION  
P.O. BOX 506  
MERRIFIELD, VA 22116

EXAMINER
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UHLENHAKE, JASON S

ART UNIT	PAPER NUMBER
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2853

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
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3 MONTHS

02/27/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/27/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

winstonhsu@naipo.com

## Office Action Summary

Application No.

10/710,667

Applicant(s)

CHANG, WEN-CHI

Examiner

Jason Uhlenhake

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,8,18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,8,18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 8, 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori (U.S. Pub. 2003/0016260) in view of Otsuki et al (U.S. Pub. 2004/0080555), Endo (U.S. Pat. 6,964,465) and Suzuki et al (U.S. Pat. 5,353,052)

#### ***Fujimori discloses:***

- ***regarding claim 1***, utilizing a plurality of test driving signals for driving the printhead to print a plurality of test patterns on a printing medium according to a test data (Paragraphs 0050, 0121-0122)
- selecting a test pattern with an optimal print quality from the test patterns; determining an optimal drive signal corresponding to the test pattern with the optimal print quality; utilizing the optimal driving signal to drive the printhead to print data (Paragraph 0123)
- ***regarding claim 3***, wherein each of the test driving signals comprises a main printing pulse, and the main printing pulses of the test driving signals all have the same voltage level but different pulse widths (Figure 16; W2 is greater than W1)
- ***regarding claim 18***, a printhead comprising a plurality of nozzles (Figure 4); a controller (control unit) electrically connected to the printhead for utilizing a plurality

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of driving signals to respectively drive at least a heating resistor of the printhead to print a plurality of test patterns on a printing medium (Figure 30, Paragraphs 0025, 0173)

- wherein the printing device selects an optimal driving signal that corresponds to a test pattern with an optimal print quality, and utilizes the optimal driving signal to drive the printhead to print data (Paragraph 0123)

- **regarding claim 19**, the printhead is an inkjet printhead (Paragraph 0005)

***Fuijiori discloses all the claimed limitations above except for the following:***

- **regarding claims 1, 18**, wherein the test data corresponds to at least one ideal straight line; selecting a test pattern with an optimal print quality from the test patterns according to differences in quality between the printed test patterns and the ideal straight line

- an image capturing module electrically connected to the controller for capturing a plurality of images corresponding to the test pattern; wherein the controller selects an optimal driving signal that corresponds to a test pattern

- **regarding claim 8 and further regarding claim 18**, each of the test patterns is used to show a plurality of first color straight lines, the test pattern that has a minimum deviation value of the first color straight lines is selected to be the test pattern with the optimal print quality

***Otsuki discloses:***

- **regarding claim 8 and further regarding claim 18**, each of the test patterns is used to show a plurality of first color straight lines, the test pattern that has a

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minimum deviation value of the first color straight lines is selected to be the test pattern with the optimal print quality (Paragraphs 0106 – 0108), for the purpose of correcting positional deviation between forward and reverse passes.

***Endo discloses:***

- ***regarding claims 1, 18***, wherein the test data corresponds to at least one ideal straight line (vertical lines printed during forward pass in ideal positions, as a reference); selecting a test pattern with an optimal print quality from the test patterns according to differences in quality between the printed test patterns and the ideal straight line (Column 1, Lines 40-56), for the purpose of correcting ink droplet landing positions for bidirectional printing

***Suzuki et al discloses:***

- ***regarding claim 18***, an image capturing module electrically connected to the controller for capturing a plurality of images corresponding to the test pattern (Column 12, Lines 25-36); wherein the controller selects an optimal driving signal that corresponds to a test pattern (Column 4, Lines 31-43; Column 5, Lines 19-25), for the purpose of providing a simple, low-cost image forming apparatus capable of accurately reading and correcting an uneven image density

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Otsuki, Endo and Suzuki into the device of Fujiwara, for the purpose of correcting positional deviation between forward and reverse passes and providing a simple, low-cost image forming apparatus capable of accurately reading and correcting an uneven image density.

***Response to Arguments***

Applicant's arguments with respect to claims 1, 3, 8, 18-19 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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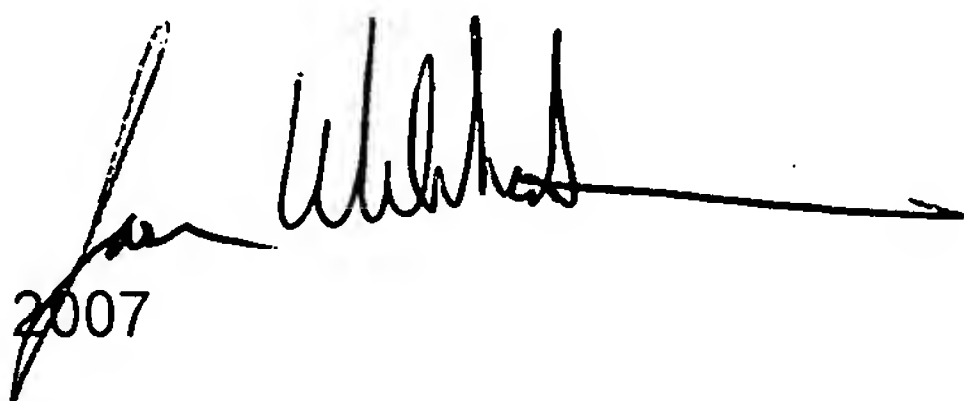
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Uhlenhake whose telephone number is (571) 272-5916. The examiner can normally be reached on Monday - Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSU

February 15, 2007



**STEPHEN MEIER**  
**SUPERVISORY PATENT EXAMINER**